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GOVERNOR OF HAWAII

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STATE OF HAWAII
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In reply, please refer to:
EMD / CWB

06097PKP.06c
DATE: July 14, 2006
NPDES PERMIT NO.:HI 0021130

RATIONALE: RENEWAL OF A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO THE WATERS OF THE UNITED STATES

PERMITTEE: AES HAWAII, INC.

FACILITY: AES HAWAII, INC.

FACILITY ADDRESS
91-086 Kaomi Loop
Kapolei, HI 96707

PERMITTEE MAILING ADDRESS
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PERMIT STATUS

NPDES Permit No. HI 0021130 was issued on January 9, 2001, and set to expire on November 30, 2005, for the discharge of storm water runoff. The Permittee requested, in a letter dated August 6, 2001, to modify their permit to allow discharges of RO and R1 water resulting from pipeline failures of the City and County of Honolulu, Board of Water Supply's distribution line, which runs through the facility. The permit was modified on October 29, 2002, and the Permittee submitted an application for renewal on June 15, 2005. The permit expired on November 30, 2005, but was administratively extended until the permit can be reissued.

The Director of Health (Director) proposes to modify the existing permit to include discharges of RO and R1 water to waters of the State until November 30, 2010, and has included in the proposed permit those terms and conditions which the Director has determined are necessary to carry out the provisions of the Federal Water Pollution Control Act (P.L. 92-500), Federal Clean Water Act of 1977 (P.L. 95-217), and Chapter 342D, Hawaii Revised Statutes.

FACILITY OPERATION AND LOCATION

AES Hawaii, Inc. is located in the Campbell Industrial Park in Ewa, Oahu, Hawaii and operates a large coal-fired cogeneration facility that simultaneously produces electrical and thermal (steam) energy. The electrical energy produced by the facility is sold to the Hawaiian Electric Company and the thermal energy is sold to the nearby Chevron Refinery. Coal used in the

operation is transported to the facility from the Barbers Point Deep Draft Harbor via a covered conveyor.

Process wastewater associated with the production of electrical and thermal energy is discharged to underground injection wells. Storm water runoff associated with the bulk materials storage area is directed to retention basins with a capacity of containing a 10-year, 24-hour rainfall event. Overflows from the retention basin are discharged to the Pacific Ocean through Outfall Serial No. 002 located at: Latitude 21°17'56"N and Longitude 158°06'22"W.

Storm water runoff from the rest of the facility is discharged to the Pacific Ocean through Outfall Serial Nos. 001 and 003 located at: Latitude 21°18'16"N, Longitude 158°06'38"W, and Latitude 21°17'24", Longitude 158°06'40", respectively.

RO and R1 water distribution lines from the Honouliuli Water Recycling Facility were installed within the facility to supply the Permittee and the Chevron Refinery with these types of water. If there should be pipeline failure of the distribution lines, RO and R1 waters will discharge through Outfall Serial Nos. 001, 002, and 003 at coordinates described above.

RECEIVING WATER DESIGNATION

The Pacific Ocean is classified by the Department of Health as a Class A, Wet Open Coastal Water under Hawaii Administrative Rules (HAR) 11-54-06(b)(2)(B). The uses to be protected are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criterial established for this class.

DESCRIPTION OF THE PRESENT DISCHARGE

A. Storm Water Associated with Bulk Materials Storage

There has never been an observed discharge of storm water associated with bulk materials storage from the retention pond designed and constructed to contain a 25-year, 24-hour rainfall event.

B. Storm Water Associated with Industrial Activity

The following table represents data reported in the NPDES permit application from Outfall Serial No. 003.

Parameter	Value	Units
Flow	0.008	MGD
Temperature	22.2	°C

Parameter	Value	Units
Biochemical Oxygen Demand	4.5	mg/l
Chemical Oxygen Demand	37.0	mg/l
Total Suspended Solids	139	mg/l
Nitrogen Ammonia	3.8	mg/l
Nitrate + Nitrite Nitrogen	3.12	mg/l
pH	7.43	Standard Units
Aluminum	2.1	mg/l
Iron	1.8	mg/l
Manganese	0.047	mg/l
Arsenic	0.01	mg/l
Copper	0.023	mg/l
Lead	0.011	mg/l

C. RO/R1 Water

RO, or "reverse osmosis" water is ultra pure processed water suitable for industrial purposes. RO water is produced when secondary treated wastewater is sent through microfiltration units prior to being forced through an ultra-fine membrane. This process removes bacteria, viruses and minerals.

R-1 water is the highest quality irrigation water regulated by the Department. This water can be safely used for landscaping and irrigating golf courses and public green spaces and is safe for human contact. R-1 water is produced when secondary treated wastewater is sent through sand filters and disinfected using with ultraviolet light.

The RO and R1 waters are continuously monitored by the Board of Water Supply and must meet stringent Department requirements before it can be delivered to customers.

PROPOSED DETERMINATIONS

The proposed effluent limitations and monitoring requirements, as specified in Part A of the proposed permit, are based on HAR, Chapter 11-54, Water Quality Standards; HAR, Chapter 11-55, Water Pollution Control; and best professional judgement (BPJ).

Conditions specified in 40 CFR Part 423, Steam Electric Power Generating Point Source Category do not apply for this facility because no process wastewater is discharged into surface waters. Storm water runoff from the bulk materials storage area is also exempt from this part because 40 CFR Section 423.12(b)(10) specifies that storm water discharges resulting from

rainfall greater than a 10-year, 24-hour rainfall event shall not be subject to the effluent limitations and monitoring requirements specified in 40 CFR Section 423.12(b)(9). AES Hawaii's bulk materials storage area includes storm water containment facilities able to hold runoff from 10-year, 24-hour rainfall events, and thus only runoff resulting from rainfall greater than 10-year, 24-hour rainfall events is discharged.

The proposed effluent limitations and monitoring requirements for storm water runoff from the bulk materials storage area are based on the existing permit and BPJ. The parameters included in the effluent limitations and monitoring requirements are water quality-based and consistent with what would be expected to be present in the discharge.

The proposed effluent limitations and monitoring requirements for storm water discharges from all areas except the bulk materials storage area are based on HAR Chapter 11-54, Chapter 11-55, Appendix B, NPDES General Permit Authorizing Discharges of Storm Water Associated With Industrial Activities, EPA Storm Water Multi-Sector Industrial General Permit, and BPJ.

The proposed permit requires the Permittee to visually monitor any discharges of RO or R1 water into the receiving waters by taking photographs of the discharge entering the receiving waters and of any plume resulting from the discharge.

The Permittee currently follows the "Honouliuli Recycled Water Program, Industrial Reclaimed Water User Training Manual, dated September 2000, which specifies reporting and Best Management Practices (BMPs) requirements, including sign posting, disinfection, and water sampling for enterococci, to be initiated in the event of a spill and/or discharge. However, the proposed modified permit also requires the Permittee to submit a RO/R1 water spill response plan that includes specific measures to be taken by the Permittee should a RO or R1 water spill occur and identifies the Permittee's and the distribution line owner's (Board of Water Supply) specific areas of responsibilities.